**Before the**
**Federal Communications Commission**
**Washington, D.C. 20554**

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| In the Matter of | ) | |
| | ) | |
| The Development of Operational, Technical | ) | WT Docket 96-86 |
| and Spectrum Requirements for Meeting | ) | |
| Federal, State and Local Public Safety | ) | |
| Communications Requirements Through the | ) | |
| Year 2010 | ) | |

# EIGHTH NOTICE OF PROPOSED RULEMAKING

**Adopted: March 17, 2006** **Released: March 21, 2006**

**Comment Date: (60 days after publication in the Federal Register)**
**Reply Comment Date: (90 days after publication in the Federal Register)**

By the Commission: Chairman Martin issuing a statement.

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## I. INTRODUCTION AND EXECUTIVE SUMMARY

1. In this *Eighth Notice of Proposed Rulemaking (Eighth NPRM)*, we seek comment on whether certain channels within the current twenty-four megahertz of public safety spectrum in the 700 MHz public safety band (764-776 MHz and 794-806 MHz), should be modified to accommodate broadband communications. This action is consistent with national priorities focusing on homeland security and broadband and our commitment to ensure that emergency first responders have access to reliable and interoperable communications.[1]

2. Nearly a decade ago, the Commission, at the direction of Congress, reallocated twenty four megahertz of the 700 MHz band from television broadcast services to public safety communications services.[2] Congress contemplated that this spectrum would be available for public safety use as early as December 31, 2006, or as soon as existing TV stations vacate the spectrum as part of the transition to digital television (DTV).[3] In discharging its Congressional mandate to establish licensing and service rules for this reallocated spectrum,[4] the Commission established a flexible regulatory framework for public safety use of the 700 MHz band "to enable public safety organizations to effectively use this new allocation for a variety of operational modes (voice, data, image/high speed data (hsd), and video)."[5] In designing this regulatory framework, the Commission sought to balance the need for "standardization necessary to achieve nationwide interoperability, the development of competitive equipment markets, and the degree of regional flexibility necessary to allow entities the opportunity to fashion approaches tailored to meet the individual needs of diverse regional communities."[6] Consistent with these principles, the Commission has made great progress towards ensuring different governmental agencies have the ability to communicate across jurisdictions. Although in many parts of the nation this spectrum remains unavailable for public safety use, Congress recognized in the Intelligence Reform and Terrorist Prevention Act of 2004 (Intelligence Reform Act)[7] that this spectrum is "ideal" for providing first responders with interoperable communications channels.[8] As part of the Deficit Reduction Act of 2005, Congress has established February 17, 2009 as the date for the completion of the transition from analog to digital broadcast transmissions.[9] Accordingly, it is imperative that once this spectrum is cleared of incumbent broadcasters, that the public safety community be able to fully utilize this spectrum.

3. Recently Congress asked the Commission, in consultation with the Department of Homeland Security and the National Telecommunications Information Administration, to undertake a study and prepare a report assessing the short-term and long-term spectrum needs of emergency

[1] The Commission has defined "Interoperability" as "an essential communications link within public safety and public service wireless communications systems which permits units from two or more different entities to interact with one another and to exchange information according to a prescribed method in order to achieve predictable results." *See* Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements Through the Year 2010, WT Docket No. 96-86, *First Report and Order and Third Notice of Proposed Rulemaking*, 14 FCC Rcd 152, 189-90 ¶ 76 (1998) (*First Report and Order*); 47 C.F.R. § 90.7.

[2] *See* 47 U.S.C. § 337(a)(1); Reallocation of Television Channels 60-69, the 746-806 MHz Band, ET Docket No. 97-157, *Report and Order*, 12 FCC Rcd 22953 (1997) (*Reallocation Report and Order*).

[3] 47 U.S.C. § 309(j)(14).

[4] 47 U.S.C. § 337(b)(1) and (d)(1).

[5] *See First Report and Order*, 14 FCC Rcd at 156 ¶ 6.

[6] *Id*.

[7] *See* Pub. L. No. 108-458, 118 Stat. 3638 (2004), codified at 6 U.S.C. § 413 (Intelligence Reform Act).

[8] *See* Intelligence Reform Act at § 7501(a)(3).

[9] *See* Pub. L. No. 109-171, 120 Stat. 4 (2006), § 3002(a).

responders, including the potential for nationwide interoperable broadband mobile communications networks.[10] In the Report to Congress submitted pursuant to Section 7502 of the Intelligence Reform Act,[11] it was recognized that broadband communications applications offer the public safety community a number of benefits, including video surveillance, real-time text messaging and e-mail, high resolution digital images and the ability to obtain location and status information of personnel and equipment in the field.[12] The Report found that emergency response providers would benefit from development of an integrated, interoperable network capable of delivering broadband services nationwide.[13] The Report also found that the Commission should investigate whether some local broadband operations could be carried out within the existing 700 MHz public safety band.[14]

4. It is our objective in this *Eighth NPRM* to determine whether we should modify the public safety portion of the 700 MHz band to accommodate broadband communications, and if so, how. We seek to develop policies that ensure that emergency first responders possess the communications resources needed to successfully carry out their mission. Broadband technologies, which encompass high-speed digital technologies, hold the potential to provide public safety entities integrated access to voice and high-speed data capabilities. A technology that can dramatically reduce the time it takes to access information during emergencies can mean the difference between life and death. Accordingly, in this *Eighth NPRM,* we describe the current configuration of the 700 MHz band and solicit comment on whether certain channels within the current 700 MHz public safety band should be modified to accommodate broadband communications. We also discuss and seek comment on specific band proposals offered by Lucent Technologies, Inc.[15] (Lucent), Motorola, Inc.[16] (Motorola), and the National Public Safety Telecommunications Council (NPSTC)[17] to rechannelize twelve megahertz of the 700 MHz public safety band to provide for broadband applications. In addition, we offer parties the opportunity to update the record on wideband[18] interoperability issues that were raised in the *Seventh Notice of Proposed*

[10] *See* Intelligence Reform Act at §§ 7502(b)(1), (c)(1).

[11] *See* Intelligence Reform Act at § 7502(d)(1).

[12] *See* Report to Congress on the Study to Assess the Short-Term and Long-Term Needs for Allocations of Additional Portions of the Electromagnetic Spectrum for Federal, State, and Local Emergency Response Providers, WT Docket No. 05-157 at 13 ¶ 26 (Dec. 16, 2005) (*Intel Reform Act Report*).

[13] *Id.*

[14] "Mobile, broadband communications, implemented in combination with upgraded equipment, associated training and close coordination, could offer emergency response providers many important capabilities. To this end, and at the urging of public safety, the Commission will expeditiously examine whether certain channels within the current allocation of twenty-four megahertz of public safety spectrum in the 700 MHz band could be modified to accommodate broadband communications." *Id*. at 3 ¶ 2.

[15] *See ex parte* letter from Michael T. McMenamin, esq., Lucent Technologies, Inc. (Lucent) to Marlene H. Dortch, Secretary, Federal Communications Commission WT Docket Nos. 96-86 and 05-157 at 3 (*Lucent ex parte*) (dated Dec. 2, 2005).

[16] *See ex parte* letter from Steve Sharkey, Motorola, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket Nos. 96-86 and 05-157 (dated Dec. 8, 2005). *See also ex parte* letter from Steve Sharkey, Motorola, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket Nos. 96-86 and 05-157 (dated Oct. 27, 2005).

[17] *See ex parte* letter from Vincent R. Stile, Chair, National Public Safety and Telecommunications Council, to Michael J. Wilhelm, Chief, Public Safety and Critical Infrastructure Division, Wireless Telecommunications Bureau, Federal Communications Commission, WT Docket Nos. 96-86 and 05-157 (*Feb. NPSTC Letter*) (dated Feb. 6, 2006).

[18] The reference to "wideband" refers to 50 kHz systems that may utilize a bandwidth no more than 150 kHz. *See* 47 C.F.R. § 90.531(c) and (d)(2). "Broadband" refers to systems that may utilize a bandwidth of one megahertz or more.

*Rulemaking* (*Seventh NPRM*) in this proceeding.[19]

## II. BACKGROUND

5. The current band plan for the public safety portion of the 700 MHz band provides narrowband[20] (voice and low speed data) and wideband (image/high speed data and slow scan video) communications channels. The allocation of the 700 MHz band between narrowband and wideband channels is depicted in Figure 1. The four narrowband segments are 764-767 MHz (Channels 1 – 480), 773-776 MHz (Channels 481-960), 794-797 MHz (Channels 961-1440) and 803-806 MHz (Channels 1441-1920).[21] Each six megahertz narrowband segment is divided into 480 channels with a channel size of 6.25 kilohertz, which may be aggregated to 25 kilohertz.[22] The two wideband segments are 767-773 MHz (Channels 1-120) and 797-803 MHz (Channels 121-240).[23] Each six-megahertz wideband segment is divided into 120 channels with a channel size of 50 kilohertz.[24] Wideband channels may be aggregated to form 100 kilohertz or 150 kilohertz channels.[25] By specifying a minimum channel size for narrowband and wideband communications the Commission sought to address both the ability of Regional Planning Committees[26] (RPC) to combine these channels as needed and spectrum efficiency concerns.[27]

[19] *See* Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements Through the Year 2010, WT Docket 96-86, *Fifth Memorandum Opinion and Order, and Sixth Report and Order, and Seventh Notice of Proposed Rulemaking,* 20 FCC Rcd 831 (2005) (*Seventh NPRM*).

[20] The reference to "narrowband" refers to 12.5 kHz and 6.25 kHz systems that carry a single voice path in those bandwidths.

[21] 47 C.F.R. § 90.531(b).

[22] 47 C.F.R. § 90.531(d)(1).

[23] 47 C.F.R. § 90.531(c).

[24] *Id*.

[25] 47 C.F.R. §§ 90.531(c) and (d)(2).

[26] A large portion of the 700 MHz public safety spectrum, approximately 53 percent (12.5 MHz), is designated for general use by local, regional and state users. A regional planning process was adopted to govern management of this public safety spectrum. Regional Planning Committees (RPCs) are responsible for creating and managing regional plans. Regional planning for the 700 MHz band was modeled after the Commission's national plan for public safety regional planning channels in the 800 MHz band. When the Commission established 700 MHz RPCs, the Commission based its decision largely on the success of 800 MHz RPCs in ensuring that public safety spectrum was fairly and efficiently put to its best, most appropriate, and most efficient use for public safety services. *See First R&O*, 14 FCC Rcd at 191 ¶ 78, *reaffirmed* Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements Through the Year 2010, WT Docket 96-86, *Second Memorandum Opinion & Order*, 15 FCC Rcd 16844 at 16872 ¶ 60 (2000) (*Second MO&O*). We note that the Commission requires that there be two separate and distinct regional plans, one for the 800 MHz band and one for the 700 MHz band.

[27] To ensure this spectrum is used efficiently, the Commission specified a "data rate per unit bandwidth" relative to the narrowband and wideband channels. *See First Report and Order*, 14 FCC Rcd at 172-175 ¶¶ 36-41; *Second MO&O*, 15 FCC Rcd. at 16855 ¶ 20 (affirming wideband data rate); 47 C.F.R. § 90.535(b) and (c).

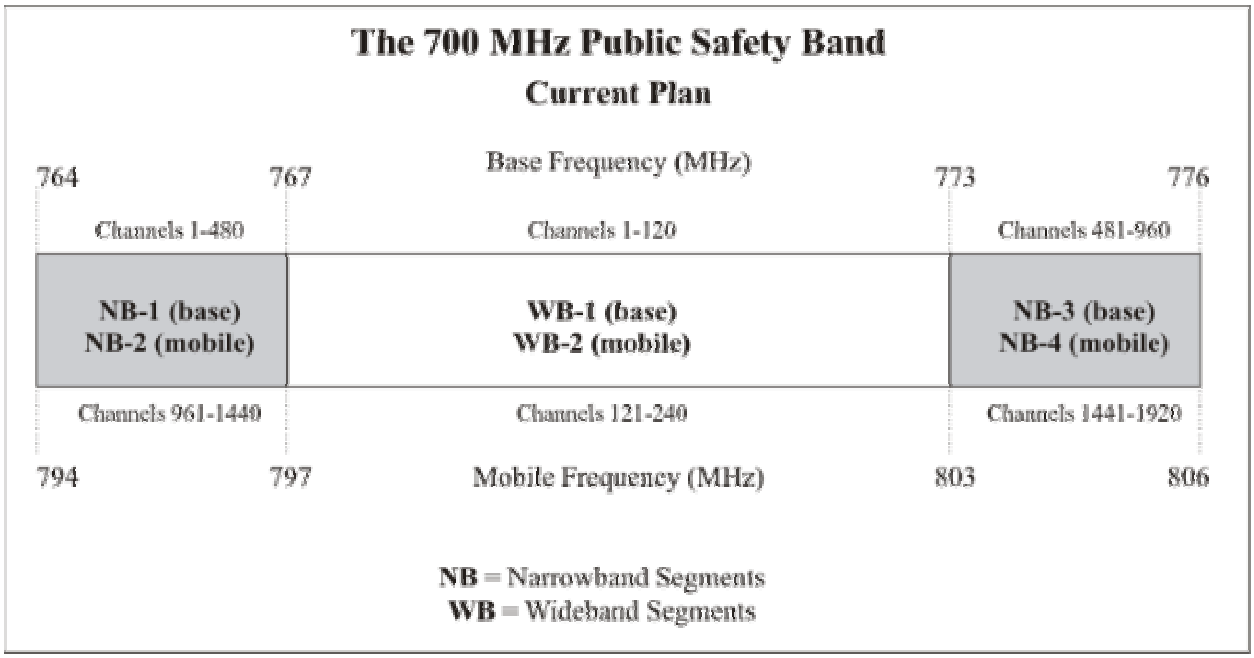


**Figure 1**

6. Within the narrowband and wideband channel segments the Commission included general use, interoperability and reserve spectrum. The Commission designated 12.5 MHz of spectrum for general use, which includes 7.7 MHz for narrowband use and 4.8 MHz for wideband.[28] All wideband general use channels are designated for assignment to public safety eligibles subject to Commission-approved RPC plans.[29] The Commission designated 2.6 megahertz of the 700 MHz public safety spectrum for nationwide interoperable communications, which consists of 0.8 megahertz for narrowband interoperability and 1.8 MHz for wideband interoperability.[30] The Commission also designated six megahertz of public safety spectrum to be held in reserve, which consists of 0.6 megahertz for narrowband and 5.4 megahertz for wideband use.[31] The Commission intended this reservation of 5.4 MHz of wideband spectrum to accommodate future needs for narrowband, wideband or broadband that may be identified through the regional planning process or developments in technology.[32] Figure 2 depicts the basic design of the wideband segments, which comprise twelve megahertz of the 700 MHz public safety band.[33]

[28] 47 C.F.R. §§ 90.531(b)(6) and (c)(3).

[29] 47 C.F.R. § 90.531(c)(3).

[30] 47 C.F.R. §§ 90.531(b)(1) and (c)(1).

[31] 47 C.F.R. §§ 90.531(b)(2) and (c)(2).

[32] *See* Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements Through the Year 2010, WT Docket 96-86, *Third Report and Order and Third Memorandum Opinion and Order*, 15 FCC Rcd. 19844, 19874 ¶ 69 (2000).

[33] *See* Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements Through the Year 2010, WT Docket 96-86, *Fourth Memorandum Opinion and Order*, 17 FCC Rcd. 4736, Appendix D (2002).

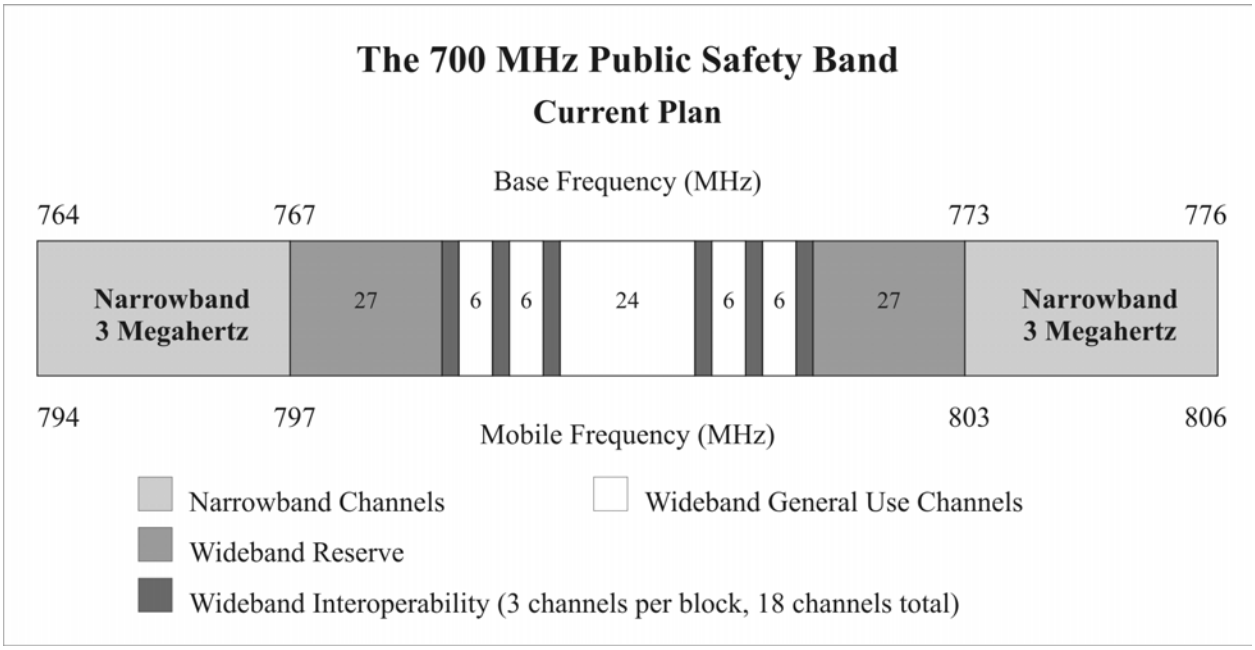


**Figure 2**

7. As noted above, the Commission has made progress towards achieving nationwide interoperability in the 700 MHz public safety band. In 2000, the Public Safety National Coordination Committee[34] (NCC) recommended that the Commission adopt Project 25 Phase I (Project 25) as the interoperability standard for the narrowband interoperability channels.[35] Subsequently, in the *Fourth Report and Order*, the Commission adopted Project 25 as the narrowband digital standard for the interoperability channels.[36] As a result, mobile and portable narrowband radios are required to be capable of operating on the interoperability channels using the Project 25 standard, ensuring that all public safety entities using 700 MHz narrowband radios will be able to communicate with each other.[37] Thus, the Commission and the public safety community are poised to move forward with nationwide interoperability on the narrowband channels, once this spectrum is cleared of incumbent broadcasters.

8. In 2003, the NCC recommended that the Commission adopt the 700 MHz wideband standard known as Scalable Adaptive Modulation (SAM) for the wideband interoperability standard.[38] The SAM standard was developed by industry consensus in cooperation with the Telecommunications

[34] The NCC was a federal advisory committee established by the Commission in 1999 to advise the Commission on operational and technical parameters for use of the 700 MHz public safety band. The NCC's charter expired on July 25, 2003.

[35] *See* Public Safety National Coordination Committee, Recommendations to the Federal Communications Commission for Technical and Operational Standards for Use of the 764-776 MHz and 794-806 MHz Public Safety Band Pending Development f Final Rules, at 17 ¶ 54 (Feb. 25, 2000) (*NCC Report*).

[36] *See* The Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements Through the Year 2010, WT Docket No. 96-86*, Fourth Report and Order and Fifth Notice of Proposed Rulemaking*, 16 FCC Rcd 2020 (2001) (*Fourth Report and Order*); 47 C.F.R. § 90.548.

[37] *See* 47 C.F.R. §§ 90.547(a), 90.548.

[38] *See* letter dated July 25, 2003 from Kathleen Wallman, Chair, National Coordination Committee to Michael Powell, Chairman, Federal Communications Commission, WT Docket 96-86 at 2 (dated July 25, 2003) (*NCC Final Report*).

Industry Association (TIA) and is comprised of the TIA-902 suite of standards.[39] In the *Seventh NPRM,* the Commission sought comment on its tentative conclusion to adopt the SAM standard as the interoperability standard for the 700 MHz wideband interoperability channels and to require all wideband radios be capable of operating on the wideband interoperability channels using SAM.[40] In response to the *Seventh NPRM*, Motorola and some public safety commenters[41] urged adoption of SAM as a mandatory standard for the wideband channels, while other equipment manufacturers and a number of public safety entities opposed the SAM standard.[42]

9. After the close of the comment period, several parties submitted *ex parte* proposals asking the Commission to step back from its efforts to complete work on wideband interoperability and instead consider whether changes could be made that would allow use of broadband technologies in the 700 MHz public safety band.[43] For example, the National Association of Regional Planning Committees (NARPC) requested that the Commission permit aggregation above 150 kHz in the wideband spectrum to permit both wideband and broadband applications.[44] NARPC envisions that 700 MHz regional planning committees would identify permitted operations within a region.[45] In a letter dated November 18, 2005, NPSTC stated:

> NPSTC believes it important that additional spectrum be allocated for public safety services, particularly for meeting expanding mobile broadband demands below 1 GHz. The current 700 MHz allocation, no matter what its structure, is not adequate to meet these requirements. Moreover, as we have noted previously, the Commission's allocation of channels within the 700 MHz for narrowband voice communications is critical and should not be altered. Public safety agencies and manufacturers have already devoted significant time and expense to plan for the use of these channels, major systems have been procured and are

[39] The SAM standard consists of the following documents: TIA-902.BAAC Wideband Air Interface Media Access Control/Radio Link Adaptation (MAC/RLA) Layer Specification Public Safety Wideband Data Standards Project Digital Radio Technical Standards, September 2002; TIA-902.BAAD Wideband Air Interface Scalable Adaptive Modulation (SAM) Radio Channel Coding (CHC) Specification Public Safety Wideband Data Standards Project Digital Radio Technical Standards, September 2002; TIA-902.BAAE Wideband Air Interface Logical Link Control (LLC) Specification Public Safety Wideband Standards Project Digital Radio Technical Standards, September 2002; TIA-902.BAEB Wideband Air Interface Packet Data Specifications (PDS) Public Safety Wideband Standards Project Digital Radio Technical Standards, May 2003; TIA-902.BAAF Wideband Air Interface Mobility Management (MM) Layer Specification Public Safety Wideband Standards Project Digital Radio Technical Standards, May 2003; and TIA-902.BAAB Wideband Air Interface Scalable Adaptive Modulation (SAM) Physical Layer Specification Public Safety Wideband Standards Project Digital Radio Technical Standards, February 2002. A related wideband data channel application for text messaging, TIA-902.AAAB, which does not involve the physical layer of the SAM technology and is not essential to the standard's definition, has not been published yet. We will address the text messaging standard at a later date, if necessary.

[40] *See Seventh NPRM*, 20 FCC Rcd at 851-853 ¶¶ 49-50.

[41] *See* Motorola comments at 10, Michigan State Highway Patrol (MSHP) comments at 6, NPSTC comments at 4, New York State Office for Technology, Statewide Wireless Network Comments at 3.

[42] The record gathered to date with respect to the SAM standard is discussed more fully in ¶¶ 32-33, *infra*.

[43] For example, the Coalition for Wideband Data Deployment (CWDD) requested the Commission to revisit the band plan to provide for broadband channels. *See ex parte* letter from Elizabeth R. Sachs, esq., on behalf of the CWDD to Marlene H. Dorcth, Secretary, Federal Communications Commission at 15 (dated Nov. 30, 2005).

[44] *See ex parte* letter from William Carter, on behalf of the National Association of Regional Planning Committees (NARPC) to Marlene H. Dortch, Secretary, Federal Communications Commission at 3 (dated Oct. 13, 2005).

[45] *Id*.

> under construction and no consideration should be given to any changes within these channels.
>
> In the context of the 700 MHz band wideband and reserved channels, NPSTC recommends that the Commission review, through a notice of proposed rulemaking, how these frequencies could be used to promote broadband access. Examining whether the wideband channels could be used more efficiently to address some of the broadband needs of public safety that cannot be satisfied at 4.9 GHz is timely. Our discussions [at the NPSTC Governing Board and Committee meetings] this week reflect varied and robust views, which we think indicates a need for the Commission to enhance its record. [46]

## III. DISCUSSION

10. We seek comment on whether certain channels within the current twenty-four megahertz of public safety spectrum in the 700 MHz public safety band should be modified to accommodate broadband communications. Three parties have offered proposals for rechannelizing the wideband and reserve portions of the 700 MHz Public Safety band, nearly twelve megahertz of spectrum or 50% of the 700 MHz allocation, to accommodate broadband operations. These specific proposals are explored in Section III. A, below. We ask commenters to describe the ways in which public safety entities could use this portion of the 700 MHz band for broadband applications. Are there applications for which this spectrum is uniquely suitable? We also ask commenters to address whether there is sufficient spectrum in the 700 MHz public safety band to accommodate effective and efficient broadband operations.

11. The three band plans discussed below all use guard bands between broadband and narrowband segments. We seek comment on the interference issues that could arise if broadband channels are allowed in proximity to the existing narrowband channels. Will accommodating broadband applications unavoidably require a guard band to protect narrowband public safety operations? If a guard band is required, how could such guard band spectrum be effectively utilized for public safety communications? What considerations are relevant to determining the size of any guard band? Does the size of the guard band possibly affect the distribution of narrowband, wideband, and broadband channels? Do all broadband technologies raise identical interference concerns?

12. The current 700 MHz band plan allocates part of the wideband segment to interoperability channels. What provisions should be made for interoperability if we change the band plan to create broadband channels? Commenters should address the purpose of interoperability in a broadband environment and how interoperability could be achieved in such an environment. What, if any, measures would this Commission need to adopt to ensure interoperability in a broadband environment? Related to this inquiry, we ask commenters to discuss the purpose of maintaining wideband interoperability channels in a broadband environment. Similarly, we ask commenters whether we should adopt an interoperability standard, and if so, should we require all wideband and broadband radios be capable of supporting such a standard?

13. NPSTC urges us to maintain the current narrowband allocation in light of the significant investments already made by manufacturers and public safety entities in planning for use of this spectrum. We tentatively conclude that we will not alter the narrowband portions of the 700 MHz band, and we seek

[46] *See ex parte* letter from Vincent R. Stile, Chair, NPSTC to Michael J. Wilhelm, Chief, Public Safety and Critical Infrastructure Division, Wireless Telecommunications Bureau, Federal Communications Commission, WT Docket Nos. 96-86 and 05-157 at 1 (dated Nov. 18, 2005) (*Nov. NPSTC letter*). *See also Feb. NPSTC Letter* at 1; *ex parte* letter from Vincent R. Stile, Chair, NPSTC to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket Nos. 96-86 and 05-157 at 1 (dated Oct. 26, 2005) (*Oct. NPSTC letter*).

comment on this tentative conclusion.

### A. Broadband Proposals

14. Motorola and NPSTC each filed proposals to both accommodate wideband and broadband needs, while Lucent submitted a proposal for rechannelizing the 700 MHz band to replace the current wideband allocation with broadband channels.

15. *Motorola Proposal*. Motorola suggests a band plan that permits both wideband and broadband technologies within the current 700 MHz wideband allocation, as illustrated in Figure 3.[47] It states that there are technical tradeoffs associated with wideband and broadband technologies: wideband provides greater coverage, while broadband provides higher data rates.[48] Therefore, since needs will likely vary across the range of public safety users, Motorola envisions its band plan would enable RPCs and users to choose wideband and broadband options best suited for their particular areas.[49]

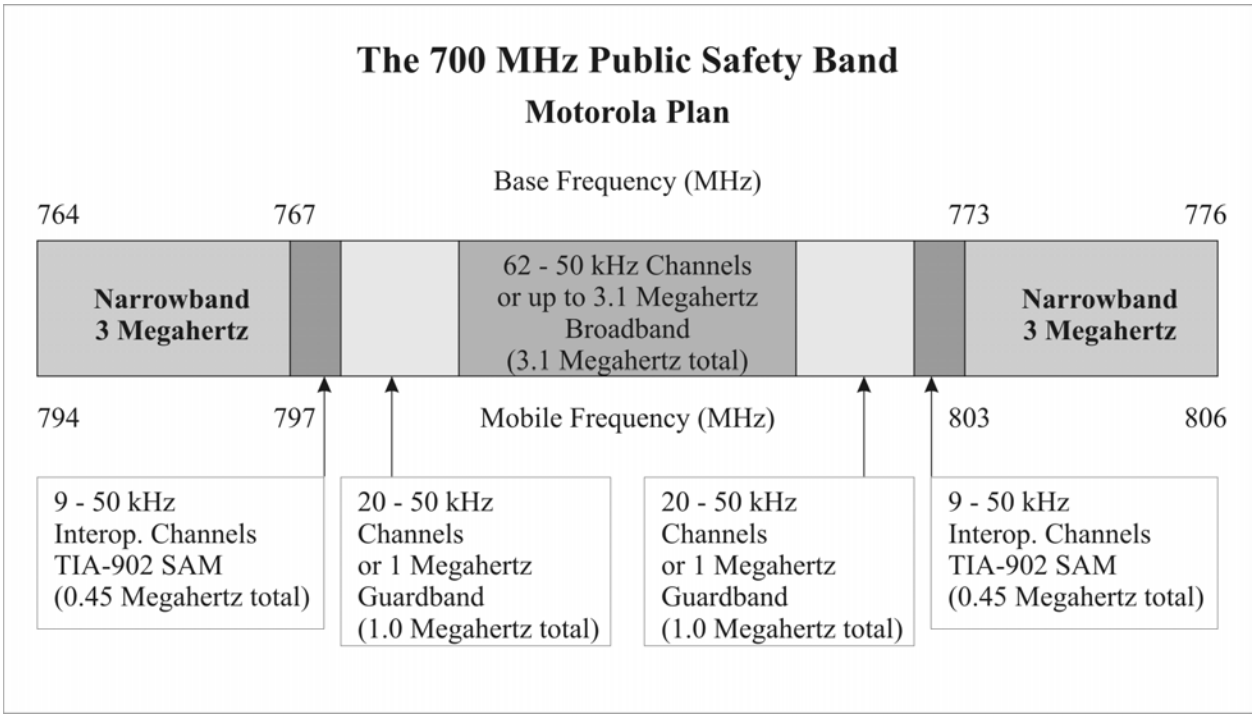


**Figure 3**

16. In its proposal, Motorola suggests the Commission combine the reserve, general use and interoperability wideband channels. Licensees would be permitted to operate using the current 50 kilohertz wideband channel structure throughout the band. In the center of the band, 3.1 megahertz would be allocated for optional broadband use.[50] Motorola proposes relocating the wideband interoperability channels adjacent to the narrowband spectrum by placing nine interoperability channels on each end of the wideband segments.[51] Motorola also proposes the Commission require SAM operation on the

[47] *See* Motorola *ex parte* dated December 8, 2005.

[48] *Id* at 2.

[49] *Id* at 3.

[50] *Id* at 3.

[51] *Id*.

interoperability channels and that SAM capability be required on all wideband and broadband radios.[52]

17. Assuming that three 1.25 megahertz channels will be used for broadband, Motorola indicates that a 1 megahertz guard band would be necessary between the proposed broadband spectrum and the 700 MHz narrowband channels in order to limit the noise floor increase in the narrowband channels to 3 dB.[53] As a result, it proposes that the twenty 50 kilohertz channels (1 megahertz) on either side of the 3.1 MHz broadband segment would serve as a guard band, or if broadband was not being used in a given area, the guard band would be available for wideband use.[54] We note that the interference levels and protection criteria used in Motorola's analysis are similar to those the Commission used to develop the Adjacent Channel Power (ACP) levels for the 700 MHz band.

18. *NPSTC Proposals*. NPSTC suggests a band plan that permits both wideband and broadband technologies within the current 700 MHz wideband allocation, as illustrated in Appendix B, *infra*.[55] Similar to the Motorola proposal, NPSTC suggests the Commission combine the reserve, general use and interoperability wideband channels and that the combined spectrum would consist of 50 kilohertz channels located between the 767-773 MHz and 797-803 MHz bands.[56] The principal differences between the Motorola and NPSTC proposal are that NPSTC suggests slightly smaller guard bands, larger broadband channels and greater flexibility for RPCs to determine the number and location of the wideband interoperability channels,[57] while Motorola proposes a greater number of wideband interoperability channels.[58] Under the NPSTC proposal, licensees would be allowed to aggregate wideband channels from 50 kilohertz wideband "building blocks" to form 1.25 megahertz broadband channels and these 1.25 kHz channels can be aggregated to form channels up to 3.75 kHz wide and centered at 770/800 MHz.[59] The broadband channels would be surrounded by .975 megahertz guard bands (1.95 megahertz total).[60] These broadband channels, NPSTC states, would be located between the 767-773/797-803 MHz bands.[61] NPSTC also suggests retaining six 50 kilohertz channels for wideband interoperability. If adopted, NPSTC envisions that licensees would have a number of options for utilizing the spectrum. These options are reflected in Appendix B, *infra*. A licensee would have the "flexibility" to either aggregate up to three 1.25 MHz channels for broadband use flanked by guard bands to protect narrowband operations as depicted in Figure 4, dedicate this spectrum for general use and interoperability wideband channels or deploy a combination of wideband and broadband operations.[62]

[52] *Id* at 5.

[53] *See* Motorola *ex parte* dated October 26, 2005 at 18.

[54] *See* Motorola *ex parte* dated December 8, 2005 at 3.

[55] *See Feb. NPSTC Letter* at 1-3.

[56] *Id*.

[57] *Id*.

[58] *See* Motorola *ex parte* dated December 8, 2005 at 3.

[59] *See Feb. NPSTC Letter* at 1-3.

[60] *Id*.

[61] *Id*.

[62] *Id*.

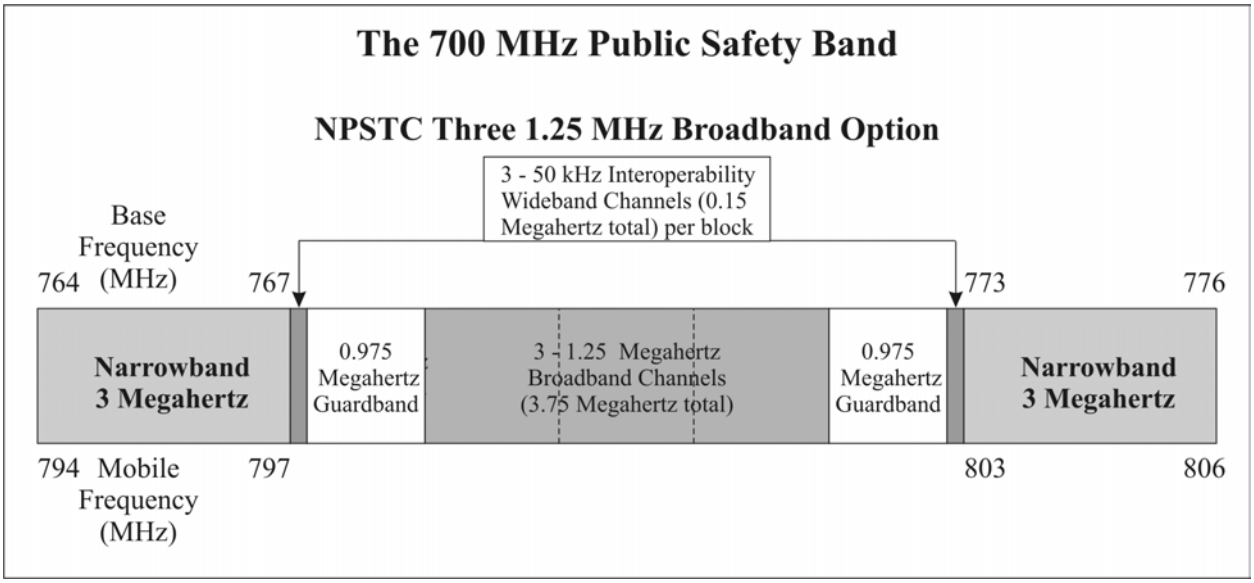


**Figure 4**

19. NPSTC reiterates that the current narrowband voice segments as well as the existing 700 MHz guard bands[63] are critical to public safety and that no changes should be considered with regard to the location of these segments, particularly in light of the significant investments that public safety agencies and manufacturers have committed already to planning for use of the narrowband voice channels.[64] NPSTC further advises that there is consensus among its members and participating interests that RPCs should be responsible for determining how a region's broadband or wideband resources should be deployed "within the parameters the Commission determines in the region's where [RPCs] are active and have the technical competency to do the technical work."[65] NPSTC submits that such flexibility is necessary to meet various public safety requirements and that the regional planning process, which is open to local officials, is the best means to determine how to best meet a region's needs.[66] Additionally, NPSTC contends, the amount of spectrum required to meet a region's broadband needs requires coordination among many agencies and RPCs already serve this function in the regions where they are active.[67]

20. *Lucent Proposal*. Lucent also submitted a proposal for accommodating broadband technologies in the 700 MHz Wideband Segments, as depicted in Figure 5.[68] It recommends the Commission combine the reserve, general use and interoperability wideband channels, thus creating six megahertz of contiguous spectrum. It recommends the combined spectrum be rechannelized to provide three 1.25 megahertz broadband channels, surrounded by two 1.125 megahertz guard bands to protect both the narrowband and broadband channels from interference.[69] Lucent claims the rechannelization to

[63] The 700 MHz guard bands consist of a total of six megahertz of paired spectrum located immediately adjacent to the 24 megahertz of public safety spectrum to protect public safety operations from harmful interference from commercial operations. As discussed below, some parties have proposed reallocating portions of the 700 MHz guard bands to public safety use. *See* ¶ 34, *infra*.

[64] *See Feb. NPSTC Letter* at 1.

[65] *See id.*

[66] *Id*.

[67] *Id*.

[68] *See* Lucent *ex parte* received December 2, 2005 at 3.

[69] *Id*. at 7.

1.25 megahertz broadband channels would increase the per user throughput, improve overall capacity, foster increased efficiency and capabilities and allow for competition.[70]

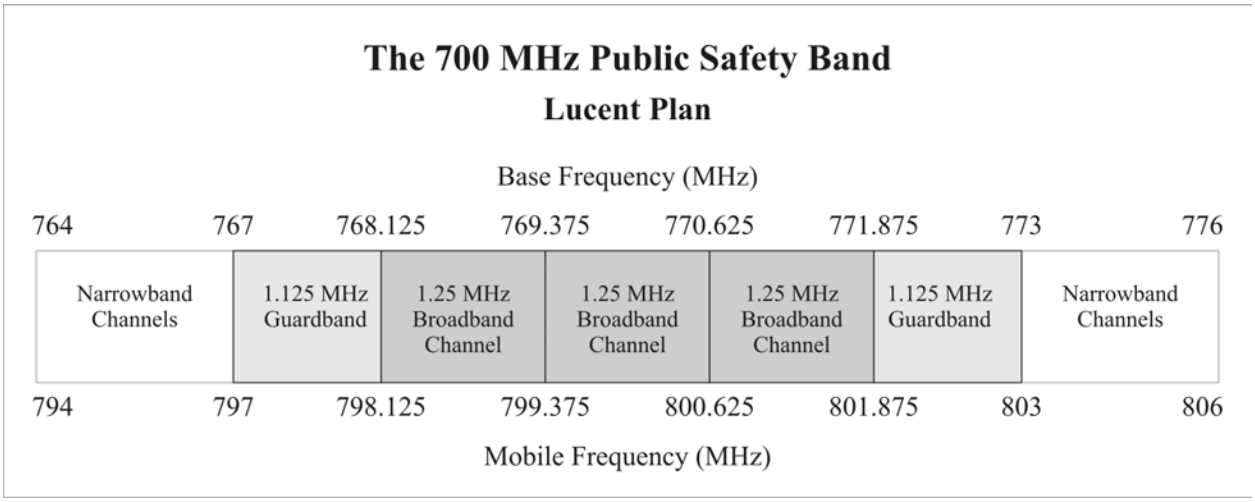


**Figure 5**

21. The Lucent proposal differs from the Motorola proposal in that Lucent recommends that the wideband spectrum be rechannelized for broadband use, while Motorola's proposal provides options for both broadband and wideband use. Lucent does not recommend setting aside channels for wideband interoperability, while Motorola recommends eighteen 50 kilohertz wideband interoperability channels. Lucent points out that under its proposal, the same channels would be used in adjacent cells/sectors.[71] Therefore, it claims, no frequency planning is required as the same channels are used throughout the network. It claims that SAM, on the other hand, requires careful frequency planning/coordination to mitigate co-channel interference.[72]

22. We request comment on the Motorola, NPSTC and Lucent proposals. We ask parties to address the relative merits of (1) adopting a band plan such as those proposed by Motorola and NPSTC, in which RPCs and users would decide whether to implement wideband or broadband in the spectrum currently dedicated to public safety wideband spectrum; (2) adopting a plan such as that proposed by Lucent, which would abandon the concept of wideband and wideband interoperability channels in the 700 MHz band in favor of creating broadband channels or (3) retaining the current 700 MHz band plan. Commenters should provide technical analysis, and should explain specifically and in detail why they agree or disagree with any of the assumptions underlying these proposals. We note that the Lucent proposal appears to specify Code Division Multiple Access 2000 (CDMA2000), a third generation wireless technology, to the exclusion of other broadband technologies.[73] We seek comment on whether a band plan such as that proposed by Lucent could be used with other broadband technologies.

23. We also invite parties to submit additional proposals for accommodating broadband applications within the 700 MHz public safety band. Such proposals should be accompanied by technical analysis and should address, where applicable, the questions that we raise herein with respect to the Motorola, Lucent and NPSTC proposals.

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[70] *Id*.

[71] *Id*. When the same channel is used in adjacent cells/sectors, it is commonly stated that the frequency reuse factor = 1, *i.e*., one frequency is used in adjacent cells/sectors.

[72] *Id*.

[73] *See* Lucent *ex parte* received December 2, 2005 at 11.

24. *Applications*. The Commission has long recognized that in order for public safety entities to successfully carry out their missions, "they must rely on a forward-looking spectrum policy that promotes beneficial technological advances into their communications systems."[74] When the Commission allocated the wideband and reserve segments, the Commission sought to address public safety's data and interoperability communications needs, while maintaining a certain amount of spectrum to address future technological developments. Comments in response to the *Seventh NPRM* suggest that public safety entities and RPCs wish to explore more advanced forms of communications to permit higher speed data applications, such as high resolution video, and to further evaluate the objective of interoperability. We request comment on public safety broadband applications. With respect to each identified application, we ask parties to discuss the extent to which the broadband channels that could be created in the 700 MHz public safety band would, or would not, provide a superior vehicle for that application than the current wideband channels would provide. We also ask parties to address how each broadband application could promote interoperability.

25. *Regional Planning*. In 1998, the Commission adopted a band plan for the 700 MHz public safety band, and established a structure to allow RPCs maximum flexibility to meet state and local needs, encourage innovative use of the spectrum, and accommodate new and as yet unanticipated developments in technology and equipment.[75] There are fifty-five RPCs[76] and each committee is required to submit its plan for the assignment of licenses for General Use spectrum.[77] Each regional plan must contain certain elements,[78] including a statement of how the plan puts the spectrum to the best possible use,[79] and must be coordinated with adjacent regions.[80] Several RPC plans are pending Commission approval[81] and the Commission has already approved four RPC plans.[82]

26. As noted above, NPSTC proposes providing RPCs the flexibility to determine the number and location of wideband and broadband channels and aggregating wideband channels to accommodate broadband. We seek comment on what effect the proposed 700 MHz band realignments

[74] *See First Report and Order*, 12 FCC Rcd at 166 ¶ 22.

[75] *See* 47 C.F.R. § 90.527; *see also First Report and Order*, 14 FCC Rcd at 195 ¶ 87. The Commission's role in relation to the RPCs is limited to: (1) defining the regional boundaries; (2) requiring fair and open procedures, *i.e.*, requiring notice, opportunity for comment, and reasonable consideration; (3) specifying the elements that all regional plans must include; and (4) reviewing and accepting proposed plans (or amendments to approved plans) or rejecting them with an explanation. *Id*.

[76] A list of 700 MHz regional planning committees and region activities is available at http://wireless.fcc.gov/publicsafety/700MHz.

[77] *See* 47 C.F.R. § 90.527.

[78] *See* 47 C.F.R. § 90.527; *see also, First Report and Order*, 14 FCC Rcd at 193-194 ¶ 84.

[79] *See* 47 C.F.R. § 90.527(b)(6).

[80] *See* 47 C.F.R. § 90.527; *see also First Report and Order*, 14 FCC Rcd at 190-196 ¶¶ 77-89.

[81] *See, e.g.*, Comments Invited on Region 43 (Washington) 700 MHz Regional Planning Committee Proposed Public Safety Plan, WT Docket 02-378, *Public Notice*, DA 06-577 (WTB PSCID 2006) (tentatively accepting the Region 43 plan); Comments Invited on Region 39 (Tennessee) 700 MHz Regional Planning Committee Proposed Public Safety Plan, WT Docket 02-378, *Public Notice*, DA 06-159 (WTB PSCID 2006) (tentatively accepting the Region 39 plan); Comments Invited on Region 22 (Minnesota) 700 MHz Regional Planning Committee Proposed Public Safety Plan and Request for Waiver, WT Docket 02-378, *Public Notice*, DA 06-91 (WTB PSCID 2006); Region 41 (Utah) 700 MHz Regional Planning Committee Proposed Plan, WT Docket 02-378 (filed February 7, 2006).

[82] *See, e.g.*, Wireless Telecommunications Bureau Approves Region 12 (Idaho) 700 MHz Regional Plan, WT Docket 02-378, *Public Notice*, DA 06-572 (WTB PSCID 2006); Wireless Telecommunications Bureau Approves Region 19 (New England) 700 MHz Regional Plan, WT Docket 02-378, *Public Notice*, DA 05-2363 (WTB PSCID 2005); Region 24 (Missouri) 700 MHz Regional Planning Committee Receives Plan Approval, WT Docket 02-378, *Public Notice*, DA 05-2055 (WTB PSCID 2005); The Region 5 (Southern California) 700 MHz Regional Plan, WT Docket 02-378, *Order*, DA 04-1247 (WTB PSCID 2004).

would have on existing and planned RPC plans. How would introduction of broadband channeling in one region affect a plan using wideband channeling in a neighboring region? What effect, if any, would realigning the 700 MHz band plan to accommodate broadband have on existing 700 MHz deployment contracts negotiated on the basis of the existing channel plan? Should we adopt any rules to protect existing or planned 700 MHz deployments done under the existing band plan or done consistent with current FCC rules related to technical parameters for public safety operations in the 700 MHz band?

27. *Channel Size and Spectrum Efficiency*. Motorola and NPSTC urge us to specify broadband channels of different sizes and allow licensees to combine these channels as needed. While flexibility is an important factor, spectrum efficiency is of equal concern. In the *First Report and Order* the Commission noted that how jurisdictions meet their needs to provide public safety communications to better protect the safety of life and property, "may have more to do with budgetary considerations than considerations of what are the most efficient and effective technologies."[83] The Commission believed that a "technical standard is necessary and appropriate to ensure that the spectrum use within the 700 MHz band is efficient."[84] For digital wireless telecommunications systems, the Commission said that "spectral efficiency can be specified in terms of the data rate per unit bandwidth."[85] For example, higher date rates may provide faster transmission speeds but require larger bandwidths, thus reducing the number of channels available. In order to ensure efficient use of the spectrum available for wideband applications, the Commission specified the equivalent of 384 kilobits per second per 150 kHz of bandwidth.[86] The Commission, however, declined to permit combining the 50 kHz channels to make channels larger than 150 kHz in the wideband segments of the 700 MHz band because "allowing a channel size that exceeds 150 kHz could significantly reduce the already limited number of wideband channel assignments possible in the band."[87]

28. Lucent notes that as data rate demands increase, the number of available channels decreases.[88] For example, while three 1.25 megahertz channels could support 30 simultaneous real-time low resolution video feeds, the same three 1.25 megahertz channels could only support 3 simultaneous high resolution video feeds.[89] We request comment on whether high data rate broadband applications such as high resolution video are a spectrally efficient use of the 700 MHz band and on whether such applications are better suited to the 4.9 GHz public safety band.[90] We seek comment on the costs and benefits of modifying the 700 MHz band to accommodate public safety broadband operations as opposed to retaining the current band plan. Related to this inquiry commenters should address the relationship among the following factors: applications, channel size, data rates, coverage area, reliability and infrastructure costs. As Motorola has observed, wideband provides greater coverage while broadband provides higher data rates. Commenters should address the technical trade-offs associated with each of these technologies with respect to infrastructure costs, the communications needs of public safety, and any other relevant considerations. Commenters should also consider the number of users permitted under the current wideband structure as compared to a broadband plan. We also ask for comment on whether to specify a standard date rate per bandwidth in a broadband environment. Related to this inquiry, commenters should associate data rates with each broadband application. When analyzing the spectral

[83] *See First Report and Order*, 12 FCC Rcd at 172-173 ¶ 37.

[84] *Id*.

[85] *Id*.

[86] *See First Report and Order*, 12 FCC Rcd at 174 ¶ 41.

[87] *Id.* at 174-175 ¶ 41.

[88] *See* Lucent *ex parte* received December 2, 2005 at 14.

[89] *Id.*

[90] The 4.9 GHz Band Transferred from Federal Government Use, *Memorandum Opinion and Order and Third Report and Order*, 18 FCC Rcd 9152 (2003).

efficiency of broadband communications, commenters should also consider that the Motorola, Lucent and NPSTC plans require guard bands between broadband and narrowband channels, and that those guard bands would occupy spectrum that would be utilized under the current wideband channel structure. We also ask whether there are any low-power or other uses that can be made by public safety of the proposed guard band spectrum.

29. *Interference.* The Lucent and Motorola proposals recommend approximately a 1.125 megahertz paired and a one megahertz paired guard band, respectively, surrounding the broadband channel(s), to protect the adjacent narrowband spectrum. NPSTC suggests that a .975 MHz paired guard band would be sufficient to protect public safety narrowband and interoperability channels from interference.[91] We request comment on this and other methods of interference protection necessary to protect both adjacent narrowband operations and in-band broadband/wideband operations.[92] Commenters should be specific and provide a technical analysis to support their findings and should also identify what types of interference could be generated in a broadband environment. As noted above, the Motorola and NPSTC proposals suggest locating a guard band between wideband interoperability channels and broadband channels to protect narrowband operations. We seek comment on whether the SAM standard could be revisited to permit effective public safety operations in those guard bands while protecting adjacent narrowband operations.

### B. Interoperability.

30. *Interoperability Requirements*. We seek comment on public safety's interoperability needs. The wideband segment consists of interoperability and general use channels. Presently, there is no wideband interoperability standard and wideband general use radios are not required to have the capability of operating on the wideband interoperability channels. The wideband channels differ from the narrowband channels in this regard, because narrowband equipment, with minor exceptions, must be capable of operating on the narrowband interoperability channels using Project 25.[93] In the *Seventh NPRM*, the Commission stated its belief that "the rules governing interoperability channels should be similar for wideband and narrowband mobile and portable radios."[94] Accordingly, the Commission tentatively concluded "that the rules should be amended to require wideband mobile and portable radios to be capable of operating on all the wideband interoperability channels using the [SAM] standard."[95] As discussed below, we are continuing in this proceeding to consider the proposed SAM standard for the channels designated within the current band plan for wideband interoperability.

31. We remain committed to ensuring that emergency first responders have access to reliable and interoperable communications. NPSTC suggests we may need to reevaluate the objective of interoperability and how a revised band plan would best promote interoperability.[96] In the event we were to adopt a proposal to rechannelize the public safety spectrum within the 700 band in order to accommodate broadband operations, we seek comment on what, if any, measures should be taken to promote interoperability in the broadband environment. As noted above, NPSTC proposes that each RPC should have the flexibility to determine the broadband channelization for its region. We seek comment on whether allowing such flexibility would undermine interoperability among public safety agencies that

[91] *See Feb. NPSTC Letter* at 3.

[92] We note that other parties have suggested different approaches for dealing with guard bands in the context of proposed restructuring of the 700 MHz Guard Band Blocks A and B. *See* ¶ 34, *infra*.

[93] 47 C.F.R. § 90.548.

[94] *See Seventh NPRM*, 20 FCC Rcd at 853 ¶ 53.

[95] *Id*. The Commission noted one exception recommended by the NCC: special-purpose equipment where the modem is integral to the special-purpose device (*i.e.,* a non-detachable component in a common enclosure or case).

[96] *See Nov. NPSTC Letter* at 1.

operate in different regions. We also ask commenters to address whether there remains a need for wideband interoperability, and if so, the amount of spectrum that should be allocated for wideband interoperability. Commenters should identify what benefits could be achieved by requiring broadband radios to be capable of operating on the wideband interoperability channels.

32. *Interoperability Standard*. We seek comment on whether to adopt interoperability standards for wideband and broadband channels. Under current rules, the wideband interoperability channels are designated for nationwide licensing and use, but are not available for licensing or use pending adoption of a wideband interoperability standard.[97] Motorola proposes we require all wideband and broadband radios to be capable of operating on the wideband interoperability channels using SAM, whereas Lucent suggests we abandon the concept of wideband interoperability. NPSTC urges that we explore whether to mandate an interoperability standard and what standard should be adopted, as well as whether all radios should be required to support this standard.[98] As a result of the comments received in this docket, we seek comment on whether to require all wideband and broadband radios to support SAM, and if so, whether such a requirement is easily achievable and could be implemented at little additional expense to public safety. Related to this question, commenters should address, whether SAM is adequate to support high resolution video over large areas. We also seek comment on whether there are any alternative interoperability standards that could be used in a broadband environment and whether we should require broadband and wideband radios to support such a standard.

33. In response to the *Seventh NPRM*, comments concerning SAM were mixed. Many public safety commenters[99] opposed adoption of SAM, citing cost concerns the lack of an application protocol standard, the lack of a need for radios to operate on the interoperability channels and the lack of identified data applications.[100] Manufacturers questioned the wisdom of adopting the SAM standard, arguing that because public safety radios use such a wide range of wideband operating systems, they cannot be interoperable.[101] Manufacturers note while SAM is an "air-interface" standard (a standard at the radio frequency or physical level), it will likely be necessary for public safety users to identify specific applications to ensure compatibility and interoperability.[102] Several radio equipment manufacturers[103] observed that Motorola holds the intellectual property rights to certain aspects of the SAM standard.[104]

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[97] *See* 47 C.F.R. § 90.531(c)(2).

[98] *Id*. at 2.

[99] *See* Comments of the Baton Rouge Police Department; Missouri State Highway Patrol; Morristown-Hamblen Emergency Medical Service; Morristown Police Department; City of Sacramento, CA; Hamblen County Emergency Communication District; Region 8 700/800 MHz Regional Planning Committee; Missouri State Highway Patrol General Headquarters Communications Division; Plattsmouth, NE Police Department; Weston, CT Police Department; Rochester, MN Police Department; Region 54 700 MHz Regional Planning Committee; St. Lucie County Fire District; Fort Pierce FL; Genesee County 911; Texarkana Arkansas Fire Department; State of Wisconsin; City of Sturgeon Bay Fire Department; Region 1 Alabama 700 MHz Planning Committee; Olmsted County Law Enforcement Center; and the City of Fort Smith, Arkansas.

[100] *See, e.g.,* St. Lucie County Fire District comments at 1, Texarkana Arkansas Fire Department comments at 1. The New York State Office for Technology, Statewide Wireless Network commented in favor of SAM, stating that it will be effective in coordinating the deployment of all levels of government resources, including coordination along the US-Canadian border, supporting homeland defense efforts within the State of New York. *See* New York State Office for Technology, Statewide Wireless Network at 3. *See also* MSHP Comments at 6.

[101] *See, e.g.,* Kenwood comments at 4.

[102] *Id*.

[103] The Coalition for Wideband Data Deployment consists of Dataradio Inc., IP Mobilent, Inc., and Kenwood USA Corporation (CWDD).

[104] *See* M/A COM reply comments at 2-3; CWDD comments at 10-11. *See also, e.g.*, Arizona DPS comments at 1; Baton Rouge PD comments at 2.

Manufacturers argued that mandating a "proprietary" standard would harm competition in the manufacture of public safety radio equipment.[105] M/A-COM, however, recommended that the Commission adopt the SAM standard on a permissive basis,[106] contending that in the NCC process, the public safety community did not identify a clear need for 700 MHz wideband interoperability channels.[107] Motorola and some public safety commenters recommended the Commission adopt the SAM standard, stating that an interoperability standard is critical to effective public safety communications when communications among various emergency responders is necessary.[108] Accordingly, while we recognize that the Commission has already sought comment on this issue in the *Seventh NPRM*, we invite parties to update the record and submit comment on whether to mandate a wideband interoperability standard.

### C. Related Matters

34. As noted above, NPSTC urges the Commission to preserve the current location of the Guard Band spectrum to protect public safety narrowband operations. The 700 MHz Guard Bands consist of a total of six megahertz of paired spectrum that was allocated to protect public safety operations in immediately adjacent bands from harmful interference while at the same time promoting the efficient use of this spectrum by commercial licensees. The 700 MHz Guard Bands are assigned in two blocks of paired spectrum, the A Block (746-747, 776-777 MHz) and the B Block (762-764, 792-794 MHz). As part of the 800 MHz Public Safety Interference proceeding in WT Docket 02-55, the Commission accepted Nextel Communication, Inc.'s surrender of its 700 MHz Guard Band Block B spectrum rights in forty two markets.[109] Although the Commission indicated that it would explore reallocating this 700 MHz spectrum for public safety use, the Commission stated that "this spectrum will not be available for licensing until the Commission decides through a rulemaking proceeding how it should be licensed."[110] In this proceeding (WT Docket 96-86), Motorola has submitted a proposal to reallocate the portion the B Block of the 700 MHz Guard Bands surrendered by Nextel, currently allocated for commercial use, to Federal and critical infrastructure interoperability with state and local governments.[111] In a separate proposal submitted in the Intelligence Reform Act proceeding in WT Docket 05-157, Access Spectrum, LLC, and Pegasus Guard Band, LLC, submitted a White Paper that contains a number of proposed options to provide public safety with a mixed public safety/commercial use block of spectrum for broadband use in the 700 MHz Guard Bands.[112] These reallocation issues raised by Motorola and Access

[105] *See* M/A COM reply comments at 2; CWDD comments at 10-11.

[106] *See* M/A-COM *ex parte* received October 28, 2005 at 3. We note that M/A-COM initially opposed the adoption of the SAM standard. *See* M/A-COM comments at 1-2 and M/A-COM reply comments at 1.

[107] *See* M/A-COM comments at 6.

[108] *See* Motorola comments at 10.

[109] *See Improving Public Safety Communications in the 800 MHz Band*, WT Docket No. 02-55, *Report and Order*, 19 FCC Rcd 14969, 15080 ¶¶ 208-209 (2004); *Improving Public Safety Communications in the 800 MHz Band*, WT Docket No. 02-55, *Supplemental Order*, 19 FCC Rcd 25120, 25126 ¶ 8 (2004) .

[110] *See 800 MHz R&O*, 19 FCC Rcd at 14977-78 ¶ 12, 15080, ¶¶ 208-209; *Supplemental Order*, 19 FCC Rcd at 25126 n. 19.

[111] *See Motorola ex parte letter* dated December 8, 2005 at 4.

[112] Access Spectrum, L.L.C., Pegasus Guard Band, L.L.C., Columbia Capital Equity Partners III, L.P. and PTPMS II Communications, L.L.C., *Implementing the Vision for 700 MHz: Rebanding the Upper 700 MHz A and B Blocks for Next-Generation Wireless Broadband*, White Paper, WT Docket No. 05-157 (filed Aug. 3, 2005); *see also* Access Spectrum, L.L.C., Pegasus Guard Band, L.L.C., Columbia Capital Equity Partners III, L.P. and PTPMS II Communications, L.L.C., *Rule Changes to Implement the Proposed Rebanding of the Upper 700 MHz A and B Blocks for Next-Generation Wireless Broadband*, Supplemental White Paper, WT Docket No. 05-157 (filed Nov. 4, 2005). *See also ex parte* Letter from Kathleen Wallman, on behalf of Pegasus Communications, *ex parte* letter to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket Nos. 96-86 and 05-157 (filed Mar. 8, 2006) (urging the Commission to consider the White Paper proposals in this proceeding or in a NPRM

Spectrum/Pegasus are beyond the scope of this proceeding; and we will address them in a separate rulemaking.

### D. Conclusion

35. We seek comment on the issues above as they relate to wideband and broadband use of the 700 MHz band. The Commission is committed to taking the necessary steps to ensure public safety has access to the spectrum it needs, and that it is utilized in the most effective and efficient manner. In the years since the reallocation of 700 MHz spectrum for public safety use, we and the public safety community have made much progress in ensuring that this spectrum can be readily utilized in support of public safety. The Commission has adopted service rules for the licensing and operation of the 700 MHz public safety band. All 50 states, Puerto Rico, the U.S. Virgin Islands and the District of Columbia hold licenses in the 700 MHz band.[113] Nearly all of the fifty-five 700 MHz RPCs have initiated their meeting process. Eight regional plans have been filed for Commission review, and four have been approved.[114] Several manufacturers have announced the availability of 700 MHz narrowband voice and data equipment, and some 700 MHz narrowband channels have been activated in areas in which incumbent broadcasters do not operate. Further, Canada and the U.S. have reached an agreement that will facilitate the deployment of 700 MHz public safety services near the U.S. - Canada border[115] and the U.S. is currently in discussion with Mexico regarding 700 MHz public safety services in the U.S. - Mexico border area. Thus we are laying the groundwork for full scale use of this spectrum once this spectrum becomes available for public safety use. We pause, however, to consider whether we should modify the current band plan to accommodate public safety broadband operations. Proponents of 700 MHz realignment should submit channel plans, technical limits, including limits to prevent interference to the narrowband channels and discuss the degree their band plans would respond to the demand for broadband applications. Additionally, we invite commenters to propose other viable uses for the interoperability channels, the general use channels and the reserve channels, *i.e.* all twelve megahertz of wideband spectrum. Proposals should be specific with regard to technologies, technical requirements and limits and should also address interoperability, and how it would be achieved under a broadband option.

## IV. PROCEDURAL MATTERS

### A. *Ex Parte* Rules – Permit-But-Disclose Proceeding

36. This is a permit-but-disclose notice and comment rulemaking proceeding. *Ex parte* presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed pursuant to the Commission's Rules.[116]

### B. Initial Regulatory Flexibility Act Analysis

37. As required by the Regulatory Flexibility Act,[117] the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of

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concurrently issued.). *See also ex parte* Letter from Ruth Milkman, esq., on behalf of Access Spectrum L.L.C. to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket Nos. 96-86 and 05-157 (filed Mar. 9, 2006).

[113] 47 C.F.R. § 90.529.

[114] *See* notes 81 and 82, *supra*.

[115] *See* Canada and U.S. Reach Agreement That Will Facilitate Deployment of Public Safety Services Near the U.S.-Canada Border in the 764-776 MHz and 794-806 MHz Frequency Bands, News Release (June 20, 2005).

[116] *See generally* 47 C.F.R. §§ 1.1202, 1.1203, 1.1206.

[117] *See* 5 U.S.C. § 603.

the policies and rules proposed in this document. The IRFA is set forth in the Appendix. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments filed in response to this *Notice of Proposed Rulemaking* as set forth below in subsection D, and have a separate and distinct heading designating them as responses to the IRFA.

### C. Initial Paperwork Reduction Act of 1995 Analysis

38. This document does not contain proposed information collection(s) subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. In addition, therefore, it does not contain any new or modified "information collection burden for small business concerns with fewer than 25 employees," pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198.[118]

### D. Comment Period and Procedures

39. Pursuant to sections 1.415 and 1.419 of the Commission's rules, 47 CFR §§ 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using: (1) the Commission's Electronic Comment Filing System (ECFS), (2) the Federal Government's eRulemaking Portal, or (3) by filing paper copies.[119] Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: http://www.fcc.gov/cgb/ecfs/ or the Federal eRulemaking Portal: http://www.regulations.gov. Filers should follow the instructions provided on the website for submitting comments. For ECFS filers, if multiple docket or rulemaking numbers appear in the caption of this proceeding, filers must transmit one electronic copy of the comments for each docket or rulemaking number referenced in the caption. In completing the transmittal screen, filers should include their full name, U.S. Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions, filers should send an e-mail to <ecfs@fcc.gov>, and include the following words in the body of the message, “get form.” A sample form and directions will be sent in response. Paper Filers: Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number. Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission. The Commission's contractor will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at 236 Massachusetts Avenue, NE., Suite 110, Washington, DC 20002. The filing hours at this location are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building. Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743. U.S. Postal Service first-class, Express, and Priority mail should be addressed to 445 12th Street, SW, Washington DC 20554. People with Disabilities: To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to <fcc504@fcc.gov> or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

### E. Further Information

40. For further information concerning this rulemaking proceeding contact: Tim Maguire (202) 418- 2155, tim.maguire@fcc.gov or John Evanoff, Esq. at (202) 418-0848, john.evanoff@fcc.gov Wireless Telecommunications Bureau, Public Safety and Critical Infrastructure Division.

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[118] *See* 44 U.S.C. § 3506(c)(4).

[119] *See* Electronic Filing of Documents in Rulemaking Proceedings, 63 FR 24121 (1998).

## V. ORDERING CLAUSES

41. Accordingly, IT IS ORDERED that, pursuant to Sections 4(i), 303(f), 332, 337 and 405 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(f), 332, 337 and 405 this *Eighth Notice of Proposed Rulemaking* IS HEREBY ADOPTED.

42. IT IS FURTHER ORDERED that pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. §§ 1.415, 1.419; interested parties may file comments on the *Eighth Notice of Proposed Rulemaking* on or before [60 days after publication in the Federal Register] and reply comments on or before [90 days after publication in the Federal Register].

43. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this *Eighth Notice of Proposed Rulemaking*, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

## APPENDIX A

## Initial Regulatory Flexibility Act Analysis

44. As required by the Regulatory Flexibility Act (RFA),[120] the Commission has prepared this Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the policies and rules proposed in this *Eighth Notice of Proposed Rule Making (Eighth Notice)*. Written public comments are requested regarding this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the *Eighth Notice* provided in paragraph 39. The Commission will send a copy of this *Eighth Notice*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.[121] In addition, this *Eighth Notice* and IRFA (or summaries thereof) will be published in the Federal Register.[122]

### A. Need for, and Objectives of, the Proposed Rules:

45. In this *Eighth Notice of Proposed Rulemaking* (*Eighth NPRM*), we seek comment on proposals to create broadband channels in the 700 MHz public safety band. Specifically, the *Eighth Notice* seeks comment on proposals to accommodate broadband and/or wideband operations on the current wideband and reserve channels (approximately 6 megahertz) of the current 700 MHz public safety spectrum allocation. This *Eighth Notice* is another step in the FCC's ongoing efforts to develop a regulatory framework in which to meet current and future public safety communications needs.

46. *Background*. This *Eighth NPRM* seeks to promote effective public safety communications and innovation in wireless services in support of public safety and homeland security. Pursuant to Congressional directive, the Commission reallocated twenty-four megahertz of spectrum in the Upper 700 MHz Band to meet the communications needs of public safety.[123] In many areas of the United States this public safety spectrum is encumbered by incumbent television stations.[124] In January 1999 the Commission chartered a federal advisory committee, the Public Safety National Coordination Committee (NCC), to advise the Commission on service rules for the 700 MHz Public Safety Band, which the Commission had divided into narrowband voice and data channels and wideband data channels, with designated interoperability channels in each of these band segments. Pursuant to the NCC's recommendations, the Commission adopted the ANSI 102 (Project 25 Phase I) suite of standards for the narrowband interoperability channels. In July 2003, the NCC concluded its work with a final set of recommendations, including the ANSI 102 Scalable Adaptive Modulation (SAM) wideband data interoperability standard. On January 5, 2005, the Commission adopted a *Seventh Notice of Proposed Rulemaking* in this proceeding which sought comment on the NCC's recommendation of the SAM standard and inquired whether all wideband radios should be capable of using the SAM standard on the wideband interoperability channels, independent of the technical standards used by such radios on the non-interoperability wideband data channels.

47. This *Eighth Notice* seeks comment on advanced data transmission technologies which may not have been fully developed and commercially viable at the time that the NCC made its final

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[120] *See* 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. §§ 601-612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

[121] *See* 5 U.S.C. § 603(a).

[122] *See id*.

[123] *See* 47 U.S.C. § 337(a)(1); Reallocation of Television Channels 60-69, the 746-806 MHz Band, ET Docket No. 97-157, *Report and Order*, 12 FCC Rcd 22953 (1997).

[124] Pursuant to the Deficit Reduction Act of 2005, Congress has established February 17, 2009, as the deadline for the end of the Digital Television transition. Thereafter, use of the 700 MHz Public Safety band will not be affected by incumbent television broadcasters.

recommendations, and which may prove more suitable to public safety's data transmission requirements. The potential benefits of these broadband technologies were raised in a November 18, 2005 filing by the National Public Safety Telecommunications Council (NPSTC) which urged "the Commission to review through a notice of proposed rulemaking, how [the 700 MHz wideband and reserve channels] could be used to promote broadband access." The use of broadband applications in the 700 MHz Public Safety Band was subsequently addressed by the Chairman of the Commission in a December 19, 2005 Report to Congress pursuant to Section 7502 of the Intelligence Reform Act. Therein, the Chairman stated that "the Commission will expeditiously examine and analyze whether certain channels within the current allocation of twenty-four megahertz of public safety spectrum in the 700 MHz band could be modified to accommodate broadband communications."

48. Consistent with national priorities focusing on homeland security and broadband, and the Commission's commitment to ensure that emergency first responders have access to reliable and interoperable communications, this *Eighth NPRM* will allow the Commission to compile a record with up-to-date information regarding the state of today's broadband technologies in an effort to determine whether there is a need for changes to the current 700 MHz public safety band plan. The *Eighth NPRM* is intended to explore opportunities to promote spectrum access for a variety of new broadband applications while ensuring reliable, interference-free, and interoperable communications. This *Eighth NPRM* also seeks to promote flexibility by seeking comment on providing a regulatory framework in which public safety entities can pursue broadband and/or wideband options in support of homeland security and protection of life and property. Further, the *Eighth NPRM* seeks to refresh the record developed in response to the *Seventh Notice of Proposed Rulemaking* in this proceeding, which addressed the issue of whether there is a continuing need for wideband data interoperability. Finally, the Commission seeks comment on whether to adopt the SAM wideband data interoperability standard.

49. The first option is to modify the band plan to combine the wideband general use, interoperability and reserve channels, channelize these channels at 50 kHz, allow Regional Planning Committees (RPCs) to combine these channels to provide wideband or broadband operations in order to meet regional needs, and establish guard bands to protect narrowband operations from interference. Under this proposal, Motorola suggests that a total of 3.1 MHz of spectrum could be deployed for broadband operations and that a total of two megahertz (1 MHz paired) be dedicated as guard bands while maintaining eighteen 50 kHz wideband interoperability channels. Motorola recommends that all wideband interoperability and broadband radios support the SAM standard.

50. Under the second option, NPSTC suggests that RPCs should have the flexibility of combining 50 kHz channels to create one to three 1.25 MHz broadband channels (3.75 MHz total). NPSTC also suggests a smaller guard band allocation of 1.95 megahertz (two .950 MHz guard bands paired) and that RPCs have flexibility in managing wideband interoperability channels.

51. The third option, offered by Lucent, involves combining the wideband general use, interoperability and reserve channels to create three 1.25 MHz broadband channels (3.75 MHz total) and two 1.125 MHz guard bands (2.25 MHz total). Lucent suggests the Commission abandon the concept of wideband interoperability.

**B. Legal Basis:**

52. The potential actions on which comment is sought in this Notice would be authorized under Sections 1, 4(i), 7, 301, 302, 303, and 337 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 157, 301, 302, 303, 337.

### C. Description and Estimate of the Number of Small Entities to Which the Rules Will Apply:

53. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the rules adopted. The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[125] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[126] A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).[127] A small organization is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field."[128] Nationwide, as of 1992, there were approximately 275,801 small organizations.

54. *Governmental Entities.* The term "small governmental jurisdiction" is defined as "governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand."[129] As of 1997, there were approximately 87,453 governmental jurisdictions in the United States.[130] This number includes 39,044 county governments, municipalities, and townships, of which 37,546 (approximately 96.2%) have populations of fewer than 50,000, and of which 1,498 have populations of 50,000 or more. Thus, we estimate the number of small governmental jurisdictions overall to be 84,098 or fewer.

55. *Public Safety Radio Licensees.* As a general matter, Public Safety Radio licensees include police, fire, local government, forestry conservation, highway maintenance, and emergency medical services.[131] The SBA rules contain a definition for cellular and other wireless telecommunications companies which encompass business entities engaged in radiotelephone communications employing no more that 1,500 persons.[132] There is a total of approximately 127,540

[125] *See* 5 U.S.C. § 601(6).

[126] 5 U.S.C. § 601(3) (incorporating by reference the definition of "small business concern" in 15 U.S.C. § 632). Pursuant to the RFA, the statutory definition of a small business applies unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.

[127] Small Business Act, 5 U.S.C. § 632 (1996).

[128] 5 U.S.C. § 601(4).

[129] 5 U.S.C. § 601(5).

[130] U.S. Census Bureau, Statistical Abstract of the United States: 2000, Section 9, pages 299-300, Tables 490 and 492.

[131] *See* subparts A and B of Part 90 of the Commission's Rules, 47 C.F.R. §§ 90.1-90.22. Police licensees include 26,608 licensees that serve state, county, and municipal enforcement through telephony (voice), telegraphy (code), and teletype and facsimile (printed material). Fire licensees include 22,677 licensees comprised of private volunteer or professional fire companies, as well as units under governmental control. Public Safety Radio Pool licensees also include 40,512 licensees that are state, county, or municipal entities that use radio for official purposes. There are also 7,325 forestry service licensees comprised of licensees from state departments of conservation and private forest organizations that set up communications networks among fire lookout towers and ground crews. The 9,480 state and local governments are highway maintenance licensees that provide emergency and routine communications to aid other public safety services to keep main roads safe for vehicular traffic. Emergency medical licensees (1,460) use these channels for emergency medical service communications related to the delivery of emergency medical treatment. Another 19,478 licensees include medical services, rescue organizations, veterinarians, persons with disabilities, disaster relief organizations, school buses, beach patrols, establishments in isolated areas, communications standby facilities, and emergency repair of public communications facilities.

[132] *See* 13 C.F.R. § 121.201 (NAICS Code 517212).

licensees within these services.[133] With respect to local governments, in particular, since many governmental entities as well as private businesses comprise the licensees for these services, we include under public safety services the number of government entities affected.

56. *Wireless Communications Equipment Manufacturers.* The SBA has established a small business size standard for radio and television broadcasting and wireless communications equipment manufacturing. Under the standard, firms are considered small if they have 750 or fewer employees.[134] Census Bureau data for 1997 indicates that, for that year, there were a total of 1,215 establishments[135] in this category.[136] Of those, there were 1,150 that had employment under 500, and an additional 37 that had employment of 500 to 999. The Commission estimates that the majority of wireless communications equipment manufacturers are small businesses.[137]

### D. Description of Projected Reporting, Recordkeeping and Other Compliance Requirements:

57. This *Eighth Notice* does not propose a rule that will entail reporting, recordkeeping, and/or third-party consultation.

### E. Steps Taken to Minimize Significant Economic Impact on Small Entities and Significant Alternatives Considered:

58. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.[138]

59. To assist the Commission in its analysis, commenters are requested to provide information regarding which public safety entities and manufacturers would be affected by the proposed changes to the 700 MHz public safety band plan as described in this *Eighth Notice*. In particular, we seek estimates of how many small entities might be affected and whether any of the proposals under consideration would be too burdensome to public safety.

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[133] There is no information currently available about the number within the 127,540 that have less than 1500 employees.

[134] 13 C.F.R. § 121.201, NAICS code 334220.

[135] The number of "establishments" is a less helpful indicator of small business prevalence in this context than would be the number of "firms" or "companies," because the latter take into account the concept of common ownership or control. Any single physical location for an entity is an establishment, even though that location may be owned by a different establishment. Thus, the number given may reflect inflated numbers of businesses in this category, including the numbers of small businesses. In this category, the Census break-out data for firms or companies only gives the total number of such entities for 1997, which were 1,089.

[136] U.S. Census Bureau, *1997 Economic Census*, Industry Series: Manufacturing, "Industry Statistics by Employment Size," Table 4, (issued August 1999) NAICS code 334220. We note, however that the predominant manufacturers of 800 MHz equipment, Motorola and M/A-COM Private Radio Systems, Inc. are not considered small businesses.

[137] We note, however that the predominant manufacturers of 700 MHz equipment, Motorola and M/A-COM Private Radio Systems, Inc., are not considered small businesses.

[138] *See* 5 U.S.C. § 603(c).

60. In the *Eighth Notice*, we seek data demonstrating the costs and benefits of modifying the 700 MHz band to accommodate public safety broadband operations. We have received three proposals for modifying the 700 MHz wideband segment to accommodate broadband. Under our current rules, wideband general use and interoperability channels may be aggregated to 150 kHz channels and conform to a data rate of 384 kilo bits per second (kbps). Public safety entities wish to explore aggregation above 150 kHz in order to achieve applications requiring higher data rates. Pursuant to the proposed band plans, the wideband channels would be combined to permit aggregation up to 1.25 kHz. Some proponents of broadband advocate allowing public safety Regional Planning Committees increased flexibility to administer the wideband spectrum to meet communications needs on a regional basis. Increasing bandwidth, however, decreases the number of channels that can be used and may also impact public safety communications coverage, reliability and infrastructure costs as well as increase the risk of interference to narrowband voice operations. Accordingly, we seek comment on the costs and benefits of modifying the existing wideband plan to accommodate broadband communications and ask commenters to identify public safety broadband applications that can be deployed in a modified 700 MHz wideband band plan.

61. Commenters are asked to address to what extent the proposed SAM wideband data interoperability standard would affect the ability of small entities to acquire wideband and/or broadband radios, as well as serve the objectives of interoperability in a broadband environment. Under the current rules, the wideband interoperability channels are not available for licensing, and wideband general use radios are not required to operate on the wideband interoperability channels. In the *Seventh Notice of Proposed Rulemaking*, the Commission sought comment on adopting a wideband data interoperability standard known as "SAM" (TIA-902, Scalable Adaptive Modulation), and requiring wideband general use radios have the capability of operating on the wideband interoperability channels using SAM. The possible adoption of a wideband data interoperability standard would potentially require all public safety 700 MHz wideband and broadband radios to incorporate the SAM standard for use on the wideband data interoperability channels. Thus we seek comment on the technical, operational and cost factors associated with such a requirement. However if we decline to adopt the SAM standard, manufacturers would be free to implement other technologies, incompatible with the SAM standard, which arguably would be a lesser regulatory burden on governmental entities and manufacturers, but which may impact data interoperability. One commenter suggests we abandon the concept of wideband interoperability, while another suggests adopting the SAM standard on a permissive basis. Accordingly, we ask commenters to address the objectives of interoperability in a modified band plan and what measures, if any, should be taken to promote interoperability in a broadband environment, as well as refresh the record regarding the SAM standard.

62. We have also sought comment on proposals to minimize the burdens of interference management on public safety entities while promoting efficient use of the spectrum. Under the proposed broadband plans, approximately two megahertz of wideband spectrum would be dedicated to guard bands in an effort to protect public safety narrowband voice operations. We seek comment on this proposal and ask commenters to identify alternative means to protect narrowband voice operations while making efficient use of the proposed guard band spectrum. We also ask commeters to address whether the SAM standard could be modified to permit efficient use of the proposed guard band spectrum.

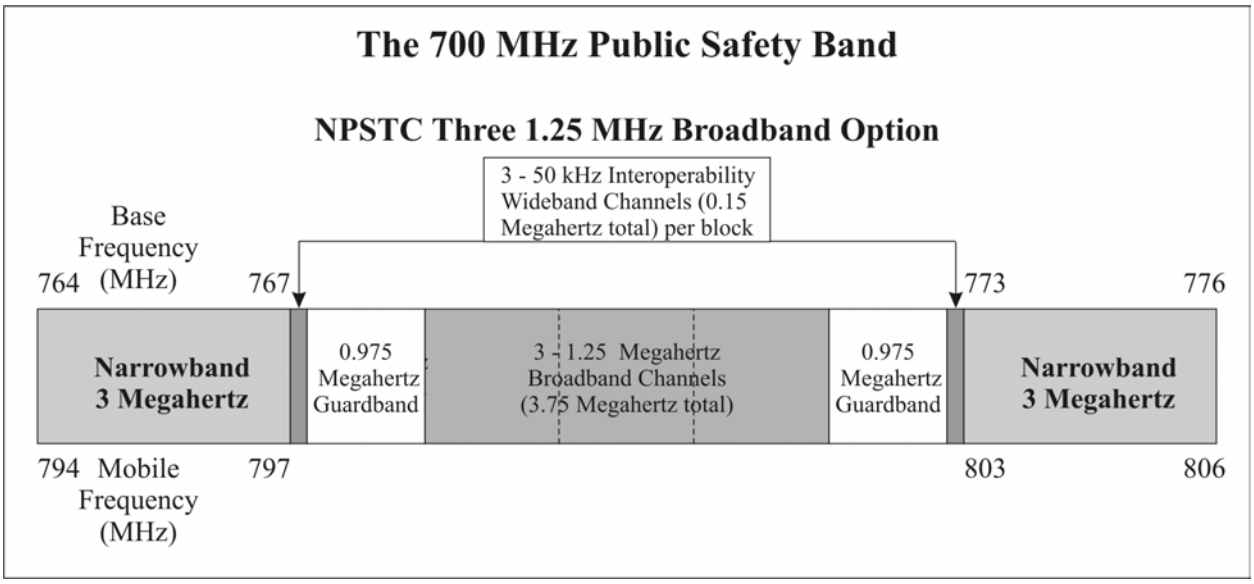
63. We also seek comment on our tentative conclusion not to modify the 700 MHz narrowband voice segment in light of the significant investments made by public safety in planning for use of this spectrum. We will continue to examine alternatives in the future with the objectives of eliminating unnecessary regulations and minimizing any significant economic impact on small entities. We seek comment on significant alternatives commenters believe we should adopt.

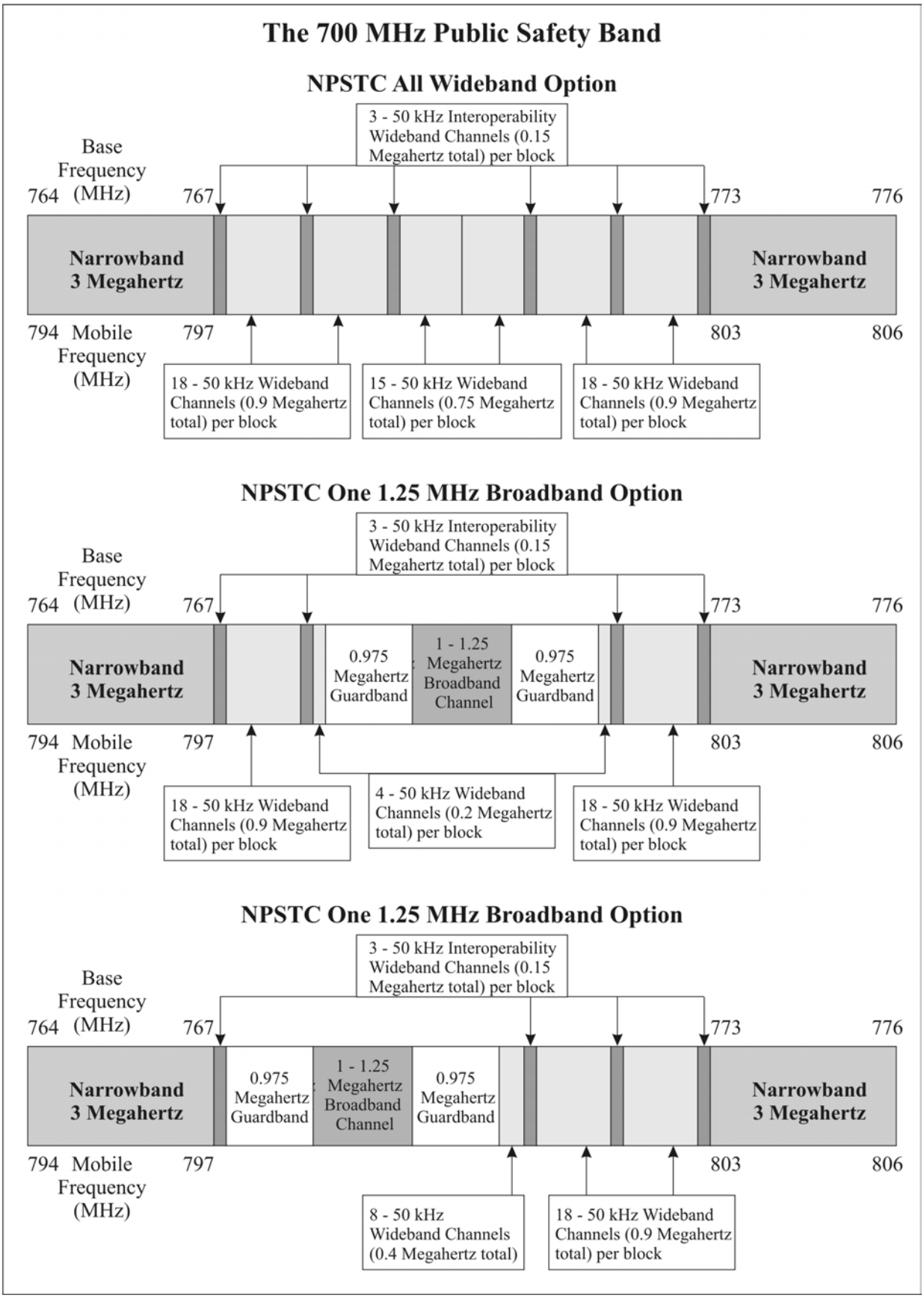
**F. Federal Rules that may Duplicate, Overlap, or Conflict with the Proposed Rules:**

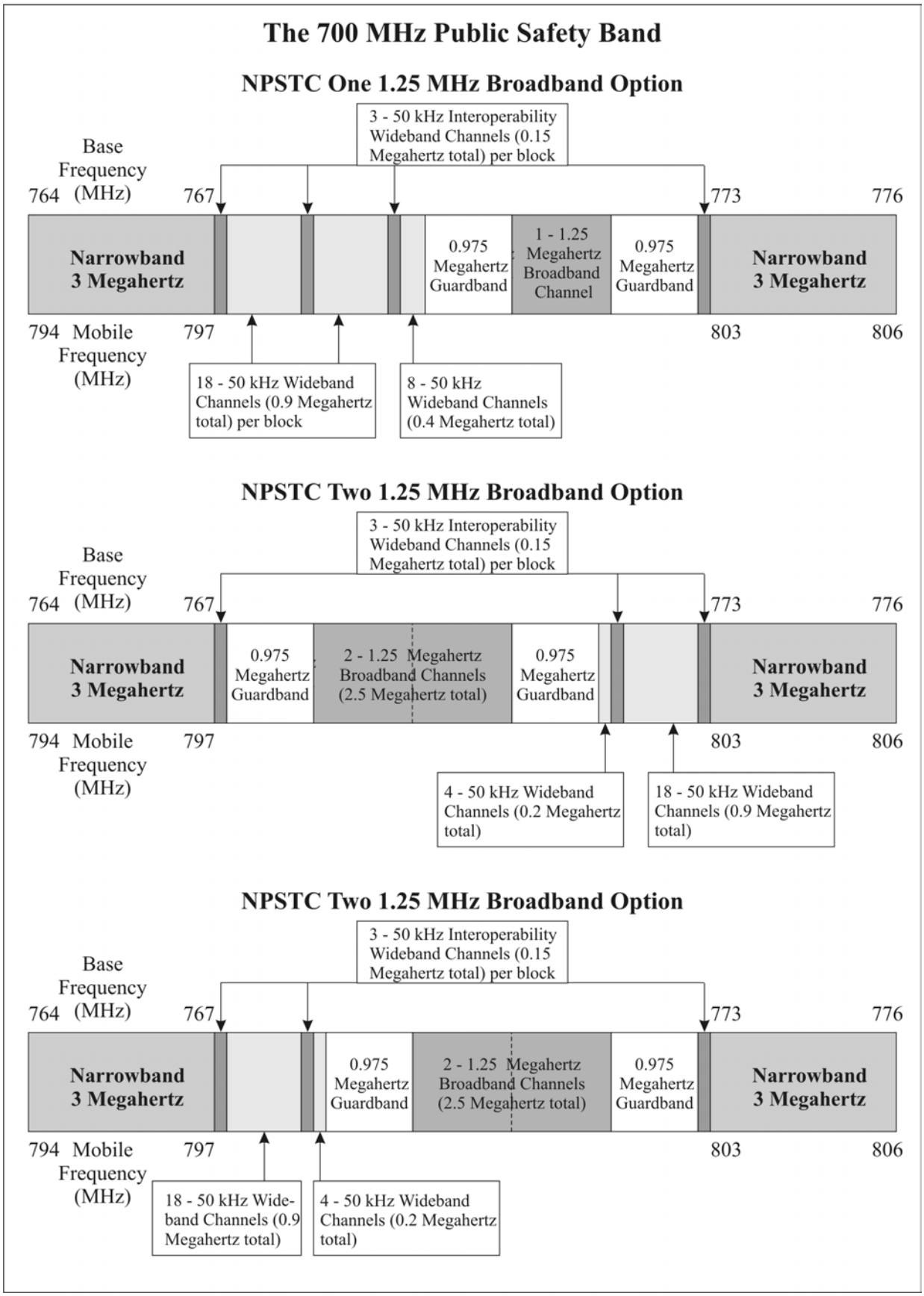
64. None.

## APPENDIX B

### National Public Safety Telecommunications Council Band Plans




The 700 MHz Public Safety Band
NPSTC All Wideband Option
3 - 50 kHz Interoperability Wideband Channels (0.15 Megahertz total) per block
Base Frequency 764 (MHz)
767
773
776
Narrowband 3 Megahertz
Narrowband 3 Megahertz
794 Mobile Frequency (MHz)
797
803
806
18 - 50 kHz Wideband Channels (0.9 Megahertz total) per block
15 - 50 kHz Wideband Channels (0.75 Megahertz total) per block
18 - 50 kHz Wideband Channels (0.9 Megahertz total) per block
NPSTC One 1.25 MHz Broadband Option
3 - 50 kHz Interoperability Wideband Channels (0.15 Megahertz total) per block
Base Frequency 764 (MHz)
767
773
776
Narrowband 3 Megahertz
0.975 Megahertz Guardband
1 - 1.25 Megahertz Broadband Channel
0.975 Megahertz Guardband
Narrowband 3 Megahertz
794 Mobile Frequency (MHz)
797
803
806
18 - 50 kHz Wideband Channels (0.9 Megahertz total) per block
4 - 50 kHz Wideband Channels (0.2 Megahertz total) per block
18 - 50 kHz Wideband Channels (0.9 Megahertz total) per block
NPSTC One 1.25 MHz Broadband Option
3 - 50 kHz Interoperability Wideband Channels (0.15 Megahertz total) per block
Base Frequency 764 (MHz)
767
773
776
Narrowband 3 Megahertz
0.975 Megahertz Guardband
1 - 1.25 Megahertz Broadband Channel
0.975 Megahertz Guardband
Narrowband 3 Megahertz
794 Mobile Frequency (MHz)
797
803
806
8 - 50 kHz Wideband Channels (0.4 Megahertz total)
18 - 50 kHz Wideband Channels (0.9 Megahertz total) per block


The 700 MHz Public Safety Band
NPSTC One 1.25 MHz Broadband Option
3 - 50 kHz Interoperability Wideband Channels (0.15 Megahertz total) per block
Base Frequency (MHz)
764
767
773
776
Narrowband 3 Megahertz
0.975 Megahertz Guardband
1 - 1.25 Megahertz Broadband Channel
0.975 Megahertz Guardband
Narrowband 3 Megahertz
794 Mobile Frequency (MHz)
797
803
806
18 - 50 kHz Wideband Channels (0.9 Megahertz total) per block
8 - 50 kHz Wideband Channels (0.4 Megahertz total)
NPSTC Two 1.25 MHz Broadband Option
3 - 50 kHz Interoperability Wideband Channels (0.15 Megahertz total) per block
Base Frequency (MHz)
764
767
773
776
Narrowband 3 Megahertz
0.975 Megahertz Guardband
2 - 1.25 Megahertz Broadband Channels (2.5 Megahertz total)
0.975 Megahertz Guardband
Narrowband 3 Megahertz
794 Mobile Frequency (MHz)
797
803
806
4 - 50 kHz Wideband Channels (0.2 Megahertz total)
18 - 50 kHz Wideband Channels (0.9 Megahertz total)
NPSTC Two 1.25 MHz Broadband Option
3 - 50 kHz Interoperability Wideband Channels (0.15 Megahertz total) per block
Base Frequency (MHz)
764
767
773
776
Narrowband 3 Megahertz
0.975 Megahertz Guardband
2 - 1.25 Megahertz Broadband Channels (2.5 Megahertz total)
0.975 Megahertz Guardband
Narrowband 3 Megahertz
794 Mobile Frequency (MHz)
797
803
806
18 - 50 kHz Wide-band Channels (0.9 Megahertz total)
4 - 50 kHz Wideband Channels (0.2 Megahertz total)

## APPENDIX C

### List of Commenters

Access Spectrum, LLC
Andy Middlebrooks
Baton Rouge Police Department
Bay Electronics, Inc.
Cazom, Inc.
City of Fort Smith, Arkansas
City of Sacramento
City of Sturgeon Bay Fire Department
Coalition for Wideband Data Deployment
Dataradio Inc.
Door County Sheriff's Department Communications Division
DS Freeman Co., LLC
EADS Public Safety Inc.
Genesee County 911
Hamblen County Emergency Communication District
Hi-Desert Communications
Kenwood USA Corporation
Lucent Technologies
M/A-COM, Inc.
Missouri State Highway Patrol General Headquarters Communications Division
Morristown-Hamblen Emergency Medical Service
Morristown Police Department
Motorola, Inc.
National Association of Regional Planning Committees, William Carter Region 54
National Public Safety Telecommunications Council
New York State, Office for Technology, Statewide Wireless Network
Olmsted County Law Enforcement Center
Plattsmouth Police Department
Quality Mobile Communications, LLC
Region 1 Alabama 700 MHz Planning Committee
Region 8 700/800 MHZ Regional Planning Committee
Region 54 700 MHz Regional Planning Committee
Rochester Police Department
Rural Telecommunications Group, Inc.
State of Wisconsin
St Lucie County, Fort Pierce FL
Texarkana Arkansas Fire Department
Viking Communications
W. Scott Tillman
Weston Police Department
Wiley Rein & Fielding LLP
William De Camp, P.E.

**STATEMENT OF**
**CHAIRMAN KEVIN J. MARTIN**

***Re: Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010, Eighth Notice of Proposed Rulemaking, (WT Docket No. 96-86), FCC 06-34***

By our actions in this Notice of Propose Rulemaking, the Commission takes another step forward in its continuing efforts to address public safety's current and future communications needs.

In our recent Report to Congress submitted pursuant to Section 7502 of the Intelligence Reform Act of 2004, we found that emergency response providers would benefit from the development of an integrated, interoperable nationwide network capable of delivering broadband services throughout the country. In recognition of public safety's need for spectrum appropriate for broadband communications, and at the urging of public safety, the Commission committed to expeditiously examine whether certain channels within the current allocation of twenty-four megahertz of public safety spectrum in the 700 MHz band could be modified to accommodate broadband communications. This item is the result of that commitment. This proceeding should help us ensure that our rules keep pace with the communications requirements of public safety and give first responders the communications capabilities they need to protect safety of life and property of the American public.